Design and Analysis of Missile aft body with Positive slots

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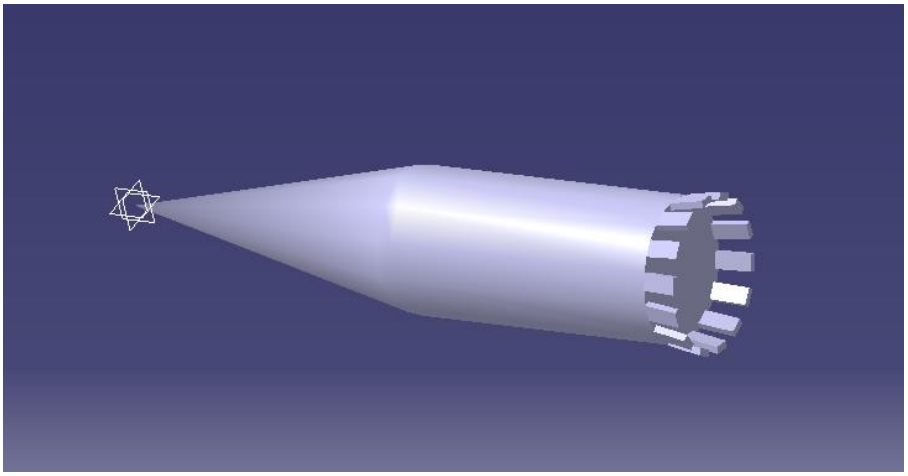
Abstract

The objective of the project is to design and analyse a missile body to enhance the reduction of base drag. The specimen is designed in CATIA and is analysed using OPENFOAM 2.0 software.

The model suggested in this paper includes attachments of rectangular slots along the periphery of the base body of the missile. The slots are placed at angles +6 degrees to the base area. The concept of slots aids in easy flow mixing in the low pressure area and thus reduces the negative pressure gradient. The flow leaks through the intervals between slots and help effective decay of pressure.



The missile body is designed with the above specification and is analysed using computational software for the following conditions :

Flow Model : Laminar, Steady, Compressible

Flow Conditions : Mach 2